

## **REMARKS**

In response to the above-identified Office Action, Applicants amend the application and seek reconsideration thereof. In this response, Applicants amend Claims 1 and 6. Applicants do not cancel or add any claims. Accordingly, Claims 1-8 are pending.

### **I. Claims Rejected Under 35 U.S.C. § 112**

Claims 1-8 stand rejected under 35 U.S.C. § 112, second paragraph as being indefinite. Applicants amend Claims 1 and 6 to recite sampled grating distributed feedback Bragg (SG-DFB) and sampled grating distributed Bragg reflector (SG-DBR). Accordingly, reconsideration and withdrawal of the rejection of Claims 1-6 are requested.

### **II. Claims Rejected Under 35 U.S.C. § 103(a)**

Claims 1-4 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Sartorius et al (U.S. Patent No. 6,215,805) in view of Weber (U.S. Patent No. 5,79,318). Applicants respectfully traverse the rejection.

To establish a *prima facie* case of obviousness, the relied upon references must teach or suggest every limitation of the claim such that the invention as a whole would have been obvious at the time the invention was made to one skilled in the art. Among other elements, amended Claim 1 recites:

“a sampled grating distributed feedback Bragg (SG-DFB) structure portion including a gain area for generating an optical wave and a phase control area, the gain area having a sampled diffraction grating of a first period;

a sampled grating distributed Bragg reflector (SG-DBR) structure portion being integrated with the SG-DFB structure portion and including a SG-DBR area having a sampled diffraction grating of a second period...” Applicants submit that Sartorius in view of Weber does not teach or suggest at least these elements.

The Examiner cites Sartorius for disclosing a reflector section (R) having a strong dispersive characteristic (col. 2, lines 10-11). The Examiner asserts that the strong dispersive characteristic of the reflector implies a difference in period between the grating of the laser section

(L) and the reflector (R). Applicants submit that the cited passage at most suggests that the dispersive characteristics of the (L) and (R) sections are different. Applicants have been unable to locate any teaching, in the cited references or knowledge generally known in the art, that equates dispersive characteristics to the period of the sampled grating. Moreover, a different dispersive characteristic may be caused by a variety of reasons. Sartorius does not mention or suggest the cause of the difference in the dispersive characteristic anywhere in the disclosure.

Additionally, as recognized by the Examiner in the rejection of Claim 2, Sartorius specifically teaches that the DFB or DBR grids are homogeneous (col. 3, lines 25-27). The Examiner relies on this teaching to infer that the sampled diffraction grating of the first period and the sampled diffraction grating of the second period have the same structure and thus the same pitches. However, the reason for rejecting Claim 2 clearly contradicts to the reason for rejecting Claim 1. If the same structure of the sampled grating implies the same pitches, how would the same structure also imply different periods?

Lastly, Sartorius discloses that the two optically coupled resonators are provided with differently structured mode combs which overlap spectrally. A skilled person in the art would understand the spectral overlapping as gratings having the same period, because the period of the grating directly relates to the spectral locations.

Weber does not cure the defect of Sartorius. The Examiner cites Weber for teaching the sampled grating. However, Weber does not teach or suggest the gain area having a sampled diffraction grating of a first period, and a SG-DBR area having a sampled diffraction grating of a second period. As shown in FIG. 1, the gratings are located outside the gain and the phase sections. For the sake of argument, even if one were to modify Sartorius with Weber to apply sampled gratings to the (L) and (R) sections, there is no teaching or suggestion that the gratings in the (L) and the (R) sections should be different.

Thus, Sartorius in view of Weber does not teach or suggest each of the elements of Claim 1. Analogous reasons apply to independent Claim 6. Claims 1-5 and 7-8 respectively depend from Claims 1 and 6 and incorporate the limitations thereof. Thus, at least for the reasons

mentioned above, Sartorius in view of Weber does not teach or suggest each of these dependent claims.

Accordingly, reconsideration and withdrawal of the obviousness rejection of Claims 1-8 are requested.


### CONCLUSION

In view of the foregoing, it is believed that all claims now are now in condition for allowance and such action is earnestly solicited at the earliest possible date. If there are any additional fees due in connection with the filing of this response, please charge those fees to our Deposit Account No. 02-2666.

Respectfully submitted,

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Erin Flynn January 6, 2006